

IN THE CLAIMS

1. (Currently amended) A syntax analysis method for analyzing syntax and describing the grammatical function of the syntax, after establishing a morpheme dictionary program for analyzing morphemes of an input sentence, a grammar rule database for storing grammar rules, and a subcategorization database for storing the details of subcategories belonging to heads, ~~such as~~ comprising stems of words ~~[[and]]~~ or word endings, of each component of a sentence such that the syntactic status of an inflective word ending is admitted based on the marker theory which regards both postpositions and endings as syntactic units, and combination relations between words can be grammatically defined as a whole, the method comprising:

(a) analyzing morphemes wherein if a sentence desired to be analyzed is input, the contents of morphemes are analyzed in units of polymorphemes according to the morpheme dictionary program, and after selecting an analysis case of a morpheme appropriate to the input data among morpheme analysis data by polymorpheme, preprocessing is performed; ~~[[and]]~~

(b) performing preprocessing in which whether or not there is a sentence construction included in a multiple morpheme list is determined by a multiple morpheme list program, and if there is a multiple morpheme sentence construction, the multiple morpheme construction is transformed into a multiple morpheme form;

(c) determining and including the meaning of the morpheme in each morpheme by a semantic feature program; and

(d) after (b), analyzing syntax wherein with the analyzed morphemes, partial structures of a sentence are first established according to grammatical rules stored in the grammar rule database, and then, by using the subcategorization database, the entire structure is established and by calculating the weighted value of each structure, a most appropriate optimum case is determined and output.

2. (Currently amended) The method of claim 1, wherein analyzing syntax comprises:

~~performing preprocessing in which whether or not there is a sentence construction included in a multiple morpheme list is determined by a multiple morpheme list program, and if there is a multiple morpheme sentence construction, the multiple morpheme construction is~~

~~transformed into a multiple morpheme form, and the meanings of words are determined by a semantic feature program and are included in morphemes;~~

forming a partial structure by operating and repeating an internal loop, wherein if a morpheme tagged with the semantic feature part of speech is input, the morpheme is treated as an individual morpheme, and by determining according to grammatical rules stored in the grammar rule database whether or not local structure rules are applied to a morpheme selected, a local structure is formed, and by referring to a succeeding object to be processed and determining whether or not a recursive local structure is formed, an internal structure is established, and if there are no other internal structures, a following process is repeatedly performed;

forming an entire structure according to the category and a sentence construction and an expression form based on the subcategorization database and ~~the affix~~ an adjunct type database;

selecting an optimum case by calculating the weight of each structure based on the location or the characteristic of a sentence construction and selecting a most important structure; and

outputting an optimum case with mobile type (tree type) linking lines such that relations among the entire structure, each partial structure, and each morpheme of the determined optimum case are correspondingly connected and indicated by the linking lines.

3. (Currently amended) The method of claim 2, wherein the ~~semantic feature program is a program for classifying the meanings of words in predetermined types, the meanings as elements for determining the syntactic characteristic of a morpheme and meaning information, such that the meanings contribute to reducing structural equivalency in a compound sentence structure and the list of affixes for each inflective word is determined;~~ the multiple morpheme list program is a program performing classification by type in order to classify word features of postpositions in an identical type or suffixes having postposition functions; the grammar rule database stores information defining grammatical rules on respective primitives; the subcategorization database stores information on details of ~~components~~ constituents that can belong to an inflective word, and forms of changeable inflective word endings; and the affix adjunct type database stores information on general features of postpositions, endings, or suffixes having functions similar to postpositions or endings, which determine the type of a local structure capable of being combined by a core word, as elements determining equivalency of a multiple branch structure.

4. (Currently amended) A natural language retrieval method for retrieving documents (sentences) by inputting a natural language question using a syntax analysis method based on a mobile configuration concept, the method comprising:

analyzing a document in which sentence analysis information of a document that is an object of retrieval is stored in a sentence information database by using a syntax analysis method based on a mobile configuration concept ~~wherein a subcategorization database, which stores the details of subcategories belonging to heads, such as stems of words and word endings, of each component of a sentence such that the syntactic status of an inflective word ending is admitted and the combination relations between words can be grammatically defined as a whole, is established, and if a sentence desired to be analyzed is input, the contents of morphemes are analyzed and with the analyzed morphemes, partial structures of a sentence are first established according to grammatical rules stored in a grammar rule database, and then, by using the subcategorization database, the entire structure is established;~~ according to claim 1;

analyzing question syntax in which in the document information database, if a question in a natural language is input, the syntax of the question is first analyzed according to the syntax analysis method based on the mobile configuration concept~~[[;]]~~ according to claim 1, the syntax analysis result is dissected in units of words according to syntax information, the interrogative sentence type of a question is captured, and a dissected, detailed question is determined;

retrieving a document in which the role of the tag of the detailed question determined in a sentence analysis dictionary is converted into a tag for retrieval according to the desired interrogative sentence type, a word having the converted tag for retrieval is retrieved in the sentence analysis dictionary, and a ranking is calculated based on the frequency of retrieval~~[[~~]]; and

displaying a result including retrieved words, sentences including tags for retrieval, and the contents of a document including the sentences.

5. (Currently amended) The method of claim 4, wherein retrieving a document comprises:

performing a ~~general~~ first retrieval mode (step) in which by using only syntactically analyzed information, and based on only the result of syntax analysis of a question, a

document database already analyzed is searched and matching contents are extracted and provided; and

performing a ~~special~~ second retrieval mode (step) in which when an ~~an~~ special expression is included in a question, according to the selection of a retriever, retrieval conditions for ~~special~~ the second retrieval mode are generated, by ~~special~~ a retrieval rule information and a noun system database, and based on the retrieval conditions, contents semantically dependent on a predetermined component are retrieved and provided,

wherein the ~~general~~ first retrieval step is formed of a component matching retrieval method by which data matching direct ~~components~~ constituents of a given question are extracted and provided, and a meaning matching retrieval method by which ~~components~~ constituents forming a question are included and data including predicates that are core words and semantically similar predicates are extracted and provided, and the ~~special~~ second retrieval step uses the ~~special~~ retrieval rule information and a database based on a semantic hierarchical structure of a noun ~~such as a noun system database~~.

6. (New) The method of claim 1, wherein in (b), the multiple morpheme list program refers to a multiple morpheme dictionary and determines whether there is a multiple morpheme form included in the multiple morpheme list among morpheme analysis data, and then the multiple morpheme form is allotted to one multiple morpheme, thus reducing structural equivalency in (d).

7. (New) The method of claim 1, wherein in (c), the semantic feature program refers to a semantic feature dictionary and tags a semantic feature to each morpheme obtained in the step of analyzing morphemes, thus determining a syntactic characteristic of the morpheme and a meaning information to reduce structural equivalency in a compound sentence structure.